AD_____

Award Number: DAMD17-00-2-0002

TITLE: Support for the Resident Research Associateship Program with the U.S. Army Medical Research and Materiel Command

PRINCIPAL INVESTIGATOR: Judith K. Nyquist, Ph.D.

CONTRACTING ORGANIZATION: National Research Council
Washington, DC 2001-2736

REPORT DATE: January 2008

TYPE OF REPORT: Final

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

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For Abstract see attached individual Final reports.

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Infectious disease; combat casualty care; chemical and biological Medical defense; military operational medicine; biomedical research

16. SECURITY CLASSIFICATION OF:				**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
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THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Policy and Global Affairs
Associateship Programs

500 Fifth Street, NW, GR 322A
Washington, DC 20001
Phone: 202 334 2760
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March 28, 2008

Ms. Judy Pawlus, Technical Editor
Office of the Deputy Chief of Staff
For Information Management
Attn: MCMR-RMI-S
504 Scott Street
Fort Detrick, MD 21702-5400

Re: Contract No. DAMD-17-00-2-0002 Technical Report

Dear Ms. Pawlus:

The enclosed technical report is to fulfill our contractual obligations for:

Contract:	**DAMD-17-00-2-0002**
Title:	**U.S. Army Medical Research and Materiel Command Resident Research Associateship Program**
Contract Period:	**January 24, 2000 – January 31, 2008**

The report covers the period January 24, 2007 through January 31, 2008. This report fulfills contractual requirements for technical reports. The original report and three copies are enclosed for your use.

Sincerely yours,

Judith K. Nyquist

Judith K. Nyquist, Ph.D.
Deputy Director and
Program Administrator

Enclosures

cc: Mr. Christopher Joyce, USARIEM, Laboratory Program Representative
Michael Dubick, Ph.D., USAISR, Laboratory Program Representative
Robert Kan, Ph.D., USAMRICD, Laboratory Program Representative
Bradley Stiles, Ph.D., USAMRIID, Laboratory Program Representative
Sara Rothman, Ph.D., WRAIR, Laboratory Program Representative
Mikel Jenkins, Contract Manager, NAS (letter)
Laboratory Contract File (letter)
Laboratory Contract Report File

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

National Research Council
RESEARCH ASSOCIATESHIP PROGRAM

with the

U.S. Army Medical Research and Materiel Command (AMRMC)

Annual Contract Technical Report

Report Period: 01/24/07 – 01/31/08

DAMD-17-00-2-0002

Publicity

The National Academies Research Associateship Programs for the report period were announced to the scientific community in the fall of the preceding year. Publicity materials describing the National Research Council- U.S. Army Medical Research and Materiel Command [AMRMC]. Programs were distributed in November to presidents, graduate deans, and heads of appropriate science and engineering departments and minority-affairs offices of all academic degree-granting institutions in the United States. An e-mail announcement of the programs was sent to these same contact points prior to each review deadline. Promotional materials were sent to Laboratory Program Representatives, Associateship Advisers, and other interested persons. General advertisements of programs were placed in leading scientific and engineering publications. Publicity materials and other related information were made available on the internet. Research Associateship Programs staff attended numerous professional scientific and engineering meetings and minority recruitment events to promote the various programs and to meet with prospective applicants throughout the year.

Requests

Application materials were distributed in response to specific requests for information about the AMRMC Research Associateship Program or as a result of general requests by persons whose fields of specialization appeared to be appropriate for the research opportunities available in the AMRMC laboratories.

Competition

Panel reviews of applicants for the Research Associateship Programs, including those with the Army Medical Research and Materiel Command are conducted in March, June, September, and/or January of each year. The following is a breakdown of the action taken with the applications during the report period.

	Sept review of Aug app-07	Mar review of Feb app-07	June review of May app-07	Nov review of Jan app-08	TOTAL
TOTAL APPLICATIONS	**4**	**7**	**10**	**6**	**27**
Number of Applications Reviewed	**3**	**4**	**7**	**5**	**19**
Applications not recommended (did not pass Review)	1	3	3	1	**8**
Applications Recommended (passed Review)	**3**	**4**	**7**	**5**	**19**
Awards offered	3	3	6	0	**12**
Awards accepted	3	2	6	0	**11**
Awards declined	0	0	0	0	**0**
Awards withdrawn by RAP (NRC officially withdrew award *after* it had been accepted.)	0	0	1	0	**1**

Associates' Citizenship

Associates on tenure between 01/24/07 – 01/31/08 were citizens of the following countries:

39 U.S. Citizens
4 Permanent Residents

1 Australia (Pemanent Resident)
1 India (Permanent Resident)
1 Japan (Permanent Resident)
1 Latvia (Permanent Resident)

1 India (OPT)
1 People's Republic Of China (OPT)
1 Australia (J-1 Research Scholar)
1 Brazil (J-1 Research Scholar)
1 Germany (J-1 Research Scholar)
1 Ghana (J-1 Research Scholar)
1 Ireland (J-1 Research Scholar)
1 Israel (J-1 Research Scholar)
1 Japan (J-1 Research Scholar)
1 New Zealand (J-1 Research Scholar)
1 Russia (J-1 Research Scholar)
1 Thailand (J-1 Research Scholar)

Associates' Activities

Associates who ended tenure during the report period were on tenure for an average of 27 months, ranging from 12 months to 48 months.

Of the 15 Associates who ended tenure during the report period, 9 submitted final reports (60%). In the final reports, Associates indicated the following scholarly activity while on tenure.

- **8** Articles published in refereed journals
- **2** Patent applications
- **9** International presentations
- **7** Domestic presentations
- **1** Awards

After ending their tenure, Associates indicated their future plans as follows:

- **1** Remain at host agency as perm. employee
- **3** Remain at host agency as contract employee
- **0** Research position at other US gov't. lab
- **0** Administrative position at US gov't. lab
- **1** Research position at foreign gov't. lab
- **0** Research/teaching-US college/university
- **0** Research/teaching-foreign college/university
- **1** Research/admin in industry
- **1** Research/admin in non-profit organization
- **2** Postdoctoral research
- **1** Self employed
- **1** Other (may include unemployed)

In their final reports, Associates were asked to evaluate certain aspects of their experiences on a scale of 1 (low) to 10 (high). The average rating for each item follows:

8.36	*Short-term value*	Development of knowledge, skills, and research productivity
9.18	*Long-term value*	How your Research Associateship affected your career to date
7.67	*Laboratory Support*	Equipment, funding, orientation, safety & health training, etc.
8.82	*NRC*	Quality of administrative support from the NRC

Advisers also were asked to complete an evaluation of the Associate. The following summarizes the Adviser evaluations for Associates ending tenure during the report period. Of the 15 Associates who ended tenure, 7 Adviser evaluations were completed 41%. Assessments were made on six criteria using the following rating scale: 1-below average, 2-average, 3-above average, 4-good, and 5-outstanding/exceptional. The average rating for each item follows:

- **8** Knowledge of Field
- **9** Research Techniques
- **8** Motivation
- **9** Independent Research
- **8** Innovative Thinking
- **8** Overall Scientific Ability

The Adviser was asked, "Would you like this Associate as a professional colleague?" The Advisers responded in the following manner:

- **2** Yes
- **0** No
- **0** No Comment
- **0** No Answer

Additional information about the Associates' activities can be found in the attachments described below and the Appendix.

Attachment 1: Associates who were on tenure between 01/24/07 and 01/31/08. Included are the Associate's laboratory center/division location, the starting and termination dates, and the names of their advisers. For those Associates who ended tenure during the report period, it is noted if the final and adviser evaluation reports have been received. Associates are required to submit final reports upon termination of tenure, and advisers are asked to submit a final evaluation of each Associate. Associates who have not submitted a final report have been sent follow-up correspondence.

Attachment 2: All recommended candidates by category (e.g., Recommended, Accepted, No Funding, Declined, etc.). This report includes information about citizenship, the PhD institution, the title of proposed research, proposed or actual starting date, and adviser.

Attachment 3: Summaries of Associate patent activity, if any, and Associate research during tenure as reported on the Associates' termination reports. The summary of patent activity includes the patent application title, inventor(s), and date of application.

Appendix: Final reports received from the Associates who ended tenure during the report period.

U.S. Army Medical Research and Materiel Command

Associate Name+ Adviser	Center	Tenure Dates Start/End	Termination Report	Adviser Report
Alkhalil, Abdulnaser *Dr. M. S. Ibrahim*	(S) U.S. Army Medical Research Institute of Infectious Diseases	6/1/2007 - 5/31/2008		
Allon, Nahum *Dr. Bhupendra P. Doctor*	Walter Reed Army Institute of Research, Silver Spring	10/11/2005 - 8/24/2007	Not Recd	Not Recd
Andres, Devon Katherine *Dr. Radharaman Ray*	U.S. Army Medical Research Institute of Chemical Defense	5/3/2006 - 5/2/2008		
Banks, Eric Anthony *Dr. Thomas J. Walters*	U.S. Army Institute of Surgical Research	7/9/2007 - 7/8/2008		
Beitzel, Brett Forrest *Dr. Connie S. Schmaljohn*	U.S. Army Medical Research Institute of Infectious Diseases	1/12/2004 - 1/11/2008	Received	Not Recd
Bhonsle, Jayendra Bhausaheb *Dr. Donald P. Huddler*	(S) Walter Reed Army Institute of Research, Silver Spring	7/6/2004 - 1/5/2008	Received	Not Recd
Biggins, Julia Elizabeth *Dr. Gene G. Olinger*	U.S. Army Medical Research Institute of Infectious Diseases	3/19/2007 - 3/18/2009		
Bradfute, Steven Blake *Dr. Thomas W. Geisbert*	U.S. Army Medical Research Institute of Infectious Diseases	2/16/2005 - 2/15/2008		
Brittingham, Katherine Tracey Cecil *Dr. Sina Bavari*	U.S. Army Medical Research Institute of Infectious Diseases	9/11/2003 - 6/10/2008		
Cashman, Kathleen Anne *Dr. Mary C. Guttieri*	U.S. Army Medical Research Institute of Infectious Diseases	7/11/2005 - 7/10/2008		
Enterlein, Sven Gunter *Dr. Sina Bavari*	U.S. Army Medical Research Institute of Infectious Diseases	12/18/2006 - 12/17/2007	Received	Not Recd
Filippov, Andrei Alexandrovich *Dr. Apurba K. Bhattacharjee*	(S) Walter Reed Army Institute of Research, Silver Spring	7/18/2005 - 7/17/2008		
Furtado, Marcio de Araujo *Dr. Debra L. Yourick*	Walter Reed Army Institute of Research, Silver Spring	9/25/2006 - 9/24/2008		
Ghosh, Kashinath *Dr. Edgar D. Rowton*	(S) Walter Reed Army Institute of Research, Silver Spring	8/1/2005 - 7/31/2008		
Glynn, Audrey Rose *Dr. Douglas S. Reed*	U.S. Army Medical Research Institute of Infectious Diseases	11/6/2006 - 11/5/2008		
Golden, Joseph Walter *Dr. Jay W. Hooper*	U.S. Army Medical Research Institute of Infectious Diseases	4/4/2005 - 4/3/2009		
Guarisco, John Arthur *Dr. John H. McDonough*	U.S. Army Medical Research Institute of Chemical Defense	9/6/2007 - 9/5/2008		
Hammerbeck, Christopher David *Dr. Jay W. Hooper*	U.S. Army Medical Research Institute of Infectious Diseases	4/10/2007 - 4/9/2008		
Hathaway, Kyle Christopher *Dr. Rodney L. Coldren*	Walter Reed Army Institute of Research, Silver Spring	6/5/2007 - 6/4/2008		
Honko, Anna Nichole *Dr. Lisa E. Hensley*	U.S. Army Medical Research Institute of Infectious Diseases	6/1/2006 - 5/31/2008		
Jenkins, Amy Lynn *Dr. Susan L. Welkos*	U.S. Army Medical Research Institute of Infectious Diseases	8/13/2007 - 8/12/2008		
Jensen, Victoria Margaret *Dr. Lisa E. Hensley*	U.S. Army Medical Research Institute of Infectious Diseases	7/19/2004 - 3/31/2007	Not Recd	Not Recd

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no intry on the Award Init Screen but data on the Post Tenure Screen.

Associate Name+ Adviser	Center	Tenure Dates Start/End	Termination Report	Adviser Report
Jirage, Dayadevi Balappa *Dr. Norman C. Waters*	(S) Walter Reed Army Institute of Research, Silver Spring	8/22/2005 - 10/10/2008		
Jones, Juli Erin *Dr. Allen Cymerman*	U.S. Army Research Institute of Environmental Medicine	2/6/2006 - 2/5/2008		
Kaba, Stephen Abanega *Dr. David E. Lanar*	Walter Reed Army Institute of Research, Silver Spring	8/1/2005 - 4/30/2008		
Kalina, Warren Vincent *Dr. Sina Bavari*	U.S. Army Medical Research Institute of Infectious Diseases	9/10/2004 - 9/9/2007	Not Recd	Not Recd
Keener, William Kelvin *Dr. Mark A. Poli*	(S) U.S. Army Medical Research Institute of Infectious Diseases	10/1/2004 - 9/30/2007	Not Recd	Not Recd
Keyser, Brian Michael *Dr. Radharaman Ray*	U.S. Army Medical Research Institute of Chemical Defense	5/4/2006 - 5/3/2008		
Koehler, Jeffrey William, Jr *Dr. Connie S. Schmaljohn*	U.S. Army Medical Research Institute of Infectious Diseases	9/17/2007 - 9/16/2008		
Liepinsh, Dmitry *Dr. Urszula Krzych*	Walter Reed Army Institute of Research, Silver Spring	4/18/2006 - 4/17/2008		
Ling, Yun *Dr. Ashima Saxena*	Walter Reed Army Institute of Research, Silver Spring	12/4/2006 - 12/3/2008		
McGann, Patrick Timothy *Dr. Nikolich P. Mikeljon*	Walter Reed Army Institute of Research, Silver Spring	1/8/2007 - 1/7/2009		
Milner, Erin Elizabeth *Dr. Michael P. Kozar*	Walter Reed Army Institute of Research, Silver Spring	7/23/2007 - 7/22/2008		
Morefield, Garry Lee *Dr. Robert G. Ulrich*	U.S. Army Medical Research Institute of Infectious Diseases	5/12/2004 - 2/9/2007	Not Recd	Not Recd
Nicoll, William Stanley *Dr. David E. Lanar*	Walter Reed Army Institute of Research, Silver Spring	4/1/2005 - 3/31/2007	Received	Not Recd
Noble, Schroeder Marie *Dr. Donald P. Huddler*	Walter Reed Army Institute of Research, Silver Spring	10/4/2005 - 8/17/2007	Received	Not Recd
Ogg, Monica M. *Dr. Jay W. Hooper*	U.S. Army Medical Research Institute of Infectious Diseases	8/27/2007 - 8/26/2008		
Olivera, Dorian Scott *Dr. Alfred M. Sciuto*	U.S. Army Medical Research Institute of Chemical Defense	11/13/2007 - 11/12/2008		
Otto, Tamara Caviston *Dr. David E. Lenz*	(S) U.S. Army Medical Research Institute of Chemical Defense	3/1/2007 - 2/28/2009		
Picchioni, Dante *Dr. Thomas J. Balkin*	Walter Reed Army Institute of Research, Silver Spring	7/5/2005 - 7/4/2008		
Reeves, Tony Elvern *Dr. David E. Lenz*	U.S. Army Medical Research Institute of Chemical Defense	6/1/2006 - 5/31/2008		
Rickards, Caroline Alice *Dr. Victor A. Convertino*	U.S. Army Institute of Surgical Research	5/31/2005 - 5/30/2008		
Ruff, Albert Leonard *Dr. James F. Dillman, III*	(S) U.S. Army Medical Research Institute of Chemical Defense	6/28/2006 - 1/4/2008	Received	Not Recd
Rupp, Tracy Lynn *Dr. Thomas J. Balkin*	Walter Reed Army Institute of Research, Silver Spring	1/23/2006 - 1/22/2009		

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no intry on the Award Init Screen but data on the Post Tenure Screen.

U.S. Army Medical Research and Materiel Command

Associate Name+ Adviser	Center	Tenure Dates Start/End	Termination Report	Adviser Report
Schully, Kevin Lee *Dr. Ricky L. Ulrich*	U.S. Army Medical Research Institute of Infectious Diseases	5/1/2007 - 4/30/2009		
Shiraki, Hiroaki *Dr. Ai J. Lin*	(S) Walter Reed Army Institute of Research, Silver Spring	11/13/2006 - 11/12/2008		
Spradling, Kimberly Diane *Dr. James F. Dillman, III*	U.S. Army Medical Research Institute of Chemical Defense	7/24/2007 - 7/23/2008		
Swanson, Katherine Irene *Dr. Russell E. Coleman*	Walter Reed Army Institute of Research, Silver Spring	11/21/2005 - 12/31/2007	Received	Not Recd
Takhampunya, Ratree *Dr. Huo-Shu H. Huong*	Walter Reed Army Institute of Research, Silver Spring	12/4/2006 - 12/3/2007	Received	Not Recd
Taylor, Shannon Lynn *Dr. Connie S. Schmaljohn*	U.S. Army Medical Research Institute of Infectious Diseases	6/8/2005 - 6/7/2009		
Toth, Stephen I. *Dr. Syed A. Ahmed*	(S) U.S. Army Medical Research Institute of Infectious Diseases	3/13/2006 - 3/12/2009		
Weeks, Christine Marie *Dr. George C. Tsokos*	Walter Reed Army Institute of Research, Silver Spring	3/1/2006 - 8/31/2007	Received	Not Recd
Wilson, Paul Anthony *Dr. Jaques Reifman*	Telemedicine and Advanced Technology Research Center	12/1/2005 - 3/30/2007	Received	Not Recd
Yokota, Miyo *Dr. Larry G. Berglund*	(S) U.S. Army Research Institute of Environmental Medicine	3/29/2006 - 3/28/2009		
Zeitler, Corinne *Dr. John H. Carra*	U.S. Army Medical Research Institute of Infectious Diseases	1/2/2008 - 1/1/2009		

55 Associates Listed

+ (S) indicates the associate was a Senior.

Highlighted entries indicate no intry on the Award Init Screen but data on the Post Tenure Screen.

February 2007

1- Recommended

SHARMA, GAURAV
Citizenship: India
Adviser: Dr. Ashima Saxena
Research Field: 6291
Research Title: Design of a Nanoparticle Based Drug-Delivery System for Bioscavengers

Ph.D. Date: 2007
Northeastern University/MA

A- Accepted Award (2 Applicants listed)

ALKHALIL, ABDULNASER
Citizenship: United States
Adviser: Dr. M. S. Ibrahim
Research Field: 3298
Research Title: Analysis of Orthopoxvirus and Host Response Proteins to Identify and Validate Therapeutic Interventions

Ph.D. Date: 2001
Georgetown University/DC
Actual Starting Date: 6/01/07
Termination Date: 5/31/08

SCHULLY, KEVIN L
Citizenship: United States
Adviser: Dr. Ricky L. Ulrich
Research Field: 3299
Research Title: Analysis of the Francisella tularensis, Yersinia pestis, Burkholderia mallei, and Burkholderia pseudomallei Transcriptomes in vivo Using Whole Genome DNA Microarrays

Ph.D. Date: 2005
Louisiana State U & A&M College
Actual Starting Date: 5/01/07
Termination Date: 4/30/09

May 2007

3- Withdrew before Review

JENNINGS, ANNA R
Citizenship: United States
Adviser: Dr. Andrew J. Young
Research Field: 1895
Research Title: Identifying the Correlation between Overweight Status and Adverse Health Outcomes among Military Personnel

Ph.D. Date: 2007
U of North Carolina-Chapel Hill

A- Accepted Award (6 Applicants listed)

GUARISCO, JOHN A
Citizenship: United States
Adviser: Dr. John H. McDonough
Research Field: 2970
Research Title: Evaluation of Novel Nerve Agent Anticonvulsants and Their Effects on Brain Neurotransmitters

Ph.D. Date: 2007
Utah State University
Actual Starting Date: 9/06/07
Termination Date: 9/05/08

May 2007

A- Accepted Award (6 Applicants listed)

JENKINS, AMY L
Citizenship: United States
Adviser: Dr. Susan L. Welkos
Research Field: 3230
Research Title: Development of in vitro Assays to Identify Common Modes of Interaction of the Pathogens Yersinia pestis and Bacillus anthracis with Macrophages as a Model for in vivo Pathogenesis
Ph.D. Date: 2007
Cornell University/NY
Actual Starting Date: 8/13/07
Termination Date: 8/12/08

KOEHLER, JEFFREY W, JR
Citizenship: United States
Adviser: Dr. Connie S. Schmaljohn
Research Field: A072
Research Title: Development and Mechanisms of Action of Enhanced Human Interferon Against Lassa Fever and Rift Valley Fever
Ph.D. Date: 2007
Tulane Univ-Sch of Medicine/LA
Actual Starting Date: 9/17/07
Termination Date: 9/16/08

MILNER, ERIN E
Citizenship: United States
Adviser: Dr. Michael P. Kozar
Research Field: 5330
Research Title: Lead Optimization of Next Generation Quinoline Methanols
Ph.D. Date: 2007
U of North Carolina-Chapel Hill
Actual Starting Date: 7/23/07
Termination Date: 7/22/08

OGG, MONICA M
Citizenship: United States
Adviser: Dr. Jay W. Hooper
Research Field: 3298
Research Title: Identificaton and Evaluation of Therapeutic Approaches to Hantavirus Pulmonary Syndrome
Ph.D. Date: 2007
U of Tex-Hlth Sci Ct-San Antonio
Actual Starting Date: 8/27/07
Termination Date: 8/26/08

SPRADLING, KIMBERLY D
Citizenship: United States
Adviser: Dr. James F. Dillman, III
Research Field: 2969
Research Title: Genomic Analysis of Rat Brain Following Exposure to the Organophosphate Anticholinesterase Sarin
Ph.D. Date: 2007
University of North Texas
Actual Starting Date: 7/24/07
Termination Date: 7/23/08

W- Withdrew after Review/Recommend

CANNON, BRIAN R
Citizenship: United States
Adviser: Dr. James F. Dillman, III
Research Field: 2968
Research Title: Proteomic Analysis of Toxicant Signal Transduction Pathways for the Development of Chemical Warfare Agent Therapeutics
Ph.D. Date: 2007
Johns Hopkins University/MD

August 2007

3- Withdrew before Review

SHIFLETT, PATRICK R
Citizenship: United States
Adviser: Dr. Connie S. Schmaljohn
Research Field: A033
Research Title: Improving the Cross-reactive Humoral Immune Response to Ebola Virus by Immune Focusing and Multiepitope Boosting of DNA Vaccines

Ph.D. Date: 2007
University of New Mexico

A- Accepted Award (3 Applicants listed)

ALTAMURA, LOUIS A
Citizenship: United States
Adviser: Dr. Connie S. Schmaljohn
Research Field: A072
Research Title: Assembly of Bunyaviruses with Biothreat Potential

Ph.D. Date: 2007
University of Pennsylvania
Actual Starting Date: 3/10/08
Termination Date: 3/09/09

OLIVERA, DORIAN S
Citizenship: United States
Adviser: Dr. Alfred M. Sciuto
Research Field: 2968
Research Title: Proposal for the Elucidation of Edema Mechanisms in Acute Phosgene Exposure

Ph.D. Date: 2006
U of New Mexico Sch of Medicine
Actual Starting Date: 11/13/07
Termination Date: 11/12/08

ZEITLER, CORINNE
Citizenship: United States
Adviser: Dr. John H. Carra
Research Field: P370
Research Title: Structural Basis of Cidofovir Resistance in the Variola Virus E9L DNA Polymerase

Ph.D. Date: 2006
Baylor College of Medicine/TX
Actual Starting Date: 1/02/08
Termination Date: 1/01/09

November 2007

3- Withdrew before Review

NYFELER, YVES A
Citizenship: Switzerland
Adviser: Dr. Ladaporn Bodhidatta
Research Field: 3299
Research Title: Legionella Pneumophila in Thailand sewers

Ph.D. Date: 2005
Max Planck Immunization Bio/Ger

November 2007

A- Accepted Award (5 Applicants listed)

DOSANJH, NUVJEEVAN S
Citizenship: England, U.K.
Adviser: Dr. Ashima Saxena
Research Field: 0931
Research Title: The Structural and Functional Characterisation of Human SMP30, a Novel DFPase
Ph.D. Date: 2005
Leicester, U Of
Expected Starting Date: 6/02/08
Termination Date: 6/01/09

MCCARTHY, SARAH E
Citizenship: United States
Adviser: Dr. John W. Huggins
Research Field: 3298
Research Title: Comparison of Pathogenecity of Monkeypox Virus Strains in Cynomologus macaques
Ph.D. Date: 2008
University of Pennsylvania
Expected Starting Date: 4/01/08
Termination Date: 3/31/09

MITCHELL, DANIEL A
Citizenship: United States
Adviser: Dr. Connie S. Schmaljohn
Research Field: A072
Research Title: Improving the Cross-reactive Humoral Immune Response to Ebola Virus by Immune Focusing and Multi-epitope Boosting of DNA Vaccines
Ph.D. Date: 2007
Florida State University
Expected Starting Date: 5/12/08
Termination Date: 5/11/09

SOOJHAWON, ISWARDUTH
Citizenship: Mauritius
Adviser: Dr. Charles B. Millard
Research Field: 0999
Research Title: X-Ray Crystallography and Kinetics Studies of Novel Bis-oxime Reactivators of Acetylcholinesterase
Ph.D. Date: 2006
Poona, U Of
Expected Starting Date: 6/02/08
Termination Date: 6/01/09

VAN DE WETERING, CHRISTOPHER I
Citizenship: United States
Adviser: Dr. Patricia L. Worsham
Research Field: 3230
Research Title: Applying Whole-body Optical Imaging to Study the Course of Infection of Bacillus anthracis and Pathogenic Yersiniae in vivo
Ph.D. Date: 2007
University of Iowa
Expected Starting Date: 5/01/08
Termination Date: 4/30/09

U.S. Army Medical Research and Materiel Command

Allon, Nahum **10/11/2005 8/24/2007**

1 Formulation of new fusion liposome that enables endosomal escape and thus, eliminate the need for fusion peptide.
2 Changing the compression peptide from artificial polylysine to natural protamine.
3 Increase of encapsulation rate and shelf life of liposomes by using lyophilized liposomes.
4 Selecting the proper experimental condition that enabled the delivery of DNA to the cell nucleus within 2 hours.
5 Visualisation of the trafficking process and the fate of the liposomes and their payload.

Beitzel, Brett Forrest **1/12/2004 1/11/2008**

1 Developed high resolution footprinting technique to identify functional domains of viral genomes.
2 Used technique to identify functionally important regions of Venezuelan Equine Encephalitis Virus nsP3.
3 Used data from (2) to construct temperature sensitive mutant that may be pursued as attenuated vaccine candidates.
4 Developing technique using next-generation sequencers to footprint entire viral genomes rapidly.

Bhonsle, Jayendra Bhausaheb **7/06/2004 1/05/2008**

1 Highly predictive 3D-QSAR models of Insect Repellents of DEFT analogs and derivatives.
2 DeNovo design of broad spectrum Antimicrobial Peptides (AMP).
3 3D-QSAR models of AMP against Staphyllococcus aureus and Mycobacterium ranae.
4 Development of "bioactive conformer mining" method for predictive 3D-QSAR model.
5 3D-QSAR models for antimalarial Pf-FABH inhibitors and mefloquine analogs & derivatives.

Enterlein, Sven Gunter **12/18/2006 12/17/2007**

1 Extensive Research of Protein interactions of Marburg and Ebola virus and the host cell.
2 Finalized a review on antisense molecules against filoviruses.
3 Gained insight into organizing a lab.

Jensen, Victoria Margaret **7/19/2004 3/31/2007**

1 Performed temporal pathogenesis study of Andres virus and Sin Nombre virus in a Syrian hamster model.
2 Developed and tested a combination Hantaan-Andes virus DNA vaccine in non-human primates.
3 Developed and tested a Puumala virus vaccine in non-human primates.
4 Characterized the Syrian hamster model of Andes virus.
5 Studied the temporal expression of Ebola GP1, 2delta in non-human primates.

Nicoll, William Stanley **4/01/2005 3/31/2007**

1 Transglutaminase 2 and Casein kinase 2 sites discovered in LSA1 through bioinformatic analysis.
2 LSA1 found to be crosslinked by transglutaminase 2 invitro.
3 LSA1 found to be phosphorylated by Casein kinase 2 invitro.
4 LSA1 is identified in vivo using LSA1 specific antibodies in plasmodium flaciparum infected chimeric mice containing functional human livers.
5 Transglutaminase 2 crosslinking is identified in plasmodium flaciparum infected chimeric mice containing functional human livers.

Noble, Schroeder Marie **10/04/2005 8/17/2007**

1 The ATPase domain of S.cerevisiae Hsp90 was crystallized in the presence of the inhibitor Indo3 and preliminary data was collected.
2 We have completed cloning, expression, and purification of full length Plasmodium falciparum Hsp90, ATPase domain PfHsp90, and an ATPase-middle domain fusion construct of PfHsp90.
3 Crystallization trials were started for the PfHsp90 ATPase-middle domain fusion construct.
4 PfHsp90 interaction partners have been identified by using a pull-down assay.

U.S. Army Medical Research and Materiel Command

Noble, Schroeder Marie **10/04/2005 8/17/2007**

5 An E.coli HTS C142A mutant was crystallized and a complete data set was collected from crystals diffracting to 2.8A.

Swanson, Katherine Irene **11/21/2005 12/31/2007**

1 Sequence analysis of sand fly pools for Leishmania gpi gene fragment yielded mainly L. tarentolae and a non-Leishmania sequence similar to Anopheles gambiae gpi.
2 Medically-important Leishmania sequences (L major, L. Tropica, L. infantum) were identified form sand fly pools from Iraq and Afghanistan. In addition, a sequence similar to both L. major and L. tropica was identified.
3 Confirmatory sequencing for Leishmania using the internal transcribed spacer (ITS) fragment was unsuccessful due to variations within sequence. However, Leishmania was detected through PCR for the ITS fragment.
4 Working through a CRADA with Human Genetic Signatures, INA Technology has been utilized to develop blocking primers for the non-Leishmania sequences in order to determine whether Leishmania sequences can be obtained from the samples.
5 A fragment of cytochromic c oxidase I was amplified from sand fly genomic DNA for the identification of sand fly species using a combination of real time PCR with SYBR Green and Melting Curve Analysis.

Takhampunya, Ratree **12/04/2006 12/03/2007**

1 The binding capability of Dengue virus (DEN) serotype 1-4 to the DCSIGN receptor on Raji cells between 8 Dengue fever (DF) strains and 10 dengue hemorrhagic fever (DHF) strains has no significant different.
2 The Dengue virus predominant strains trend to bind to DCSIGN receptor on Raji cells better than non-predominant strains.
3 Within DEN-1 the binding and internalization abilities of DHF strain (ThD1-0323/91) and DF strain (ThD1-0488/94) to human Dendritic cells (3 donors) has no significant different when compare the amount of virus bound to receptors on human DCs.
4 Studying the replication rates of 18 isolates of DEN in human DCs cells, we found that DHF strains replicate more efficient than DF strains when compare the production of virus titer from human DCs (3-5 donors) at 48 hr post-infection.

Weeks, Christine Marie **3/01/2006 8/31/2007**

1 DAF and ischemia-reperfusion injury; DAF treatment after ischemia and prior to reperfusion attenuates remote IR injury in mice in both hindlimb and mesentric ischemia models.
2 B cell depletion and ischemia-reperfusion injury: experiments in progress.

Wilson, Paul Anthony **12/01/2005 3/30/2007**

1 80% of PPRODO scores 0.7 or higher predict protein structural domain boundaries correctly (within 15 residues).
2 A software tool for easily creating custom parallel software pipelines was developed.
3 The software tool provides good speed up for up to the maximum number of tested processors - 256.
4 479 E. Choli. K12 protein-protein interactions are found in both Prolinks and DIP interaction networks.
5 Prolinks database not useful for developing an interaction network for E Coli K12.

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National Research Council

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Research Associateship Programs

FINAL REPORT

Print Layout View

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Beitzel	**Brett**	**F**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. Street **14131 Arbor Forest Dr #303** City, State Zip **Rockville, MD 20850**	**Home Phone: 301-762-3290** **Alt. Phone: 301-619-4108** **E-mail: brett.beitzel@amedd.army.mil**
3) *Today's Date* **January 10, 2008**	*Dates of Tenure* from **January 11, 2004** to **January 11, 2008**

4) *Agency*	*Laboratory or Center*	*Division / Directorate / Department*
AMRMC	**USAMRIID**	**Virology**

5) *Name of Laboratory NRC Adviser* (and USMA Mentor, if applicable)
Connie Schmaljohn

6) *TITLE OF RESEARCH PROPOSAL*
High Resolution Functional Mapping of Viral Genomes

JAN 10 2008

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) Developed high resolution footprinting technique to identify functional domains of viral genomes

2) Used technique to identify functionally important regions of Venezuelan Equine Encephalitis Virus nsP3

3) Used data from (2) to construct temperature sensitive mutant that may be pursued as attenuated vaccine candidates

4) Developing technique using next-generation sequencers to footprint entire viral genomes rapidly

5)

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

Currently developing a genetic footprinting technique utilizing next generation sequencers. This technique will allow the functional analyzis of entire viral genomes, up to hundreds of kilobases in a single experiment. In conjuntion with this project, we are also developing techniques that will allow us to create libraries of mutants in which each mutant has a defined change down to single nucleotide resolution.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Genetic footprinting and construction of novel temperature sensitive mutants of Venezuelan Equine Encephalitis Virus non-structural protein 3. Brett Beitzel and Connie Schmaljohn submitted to Journal of Virology

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

Domestic

The American Society for Virology Annual Meeting
July 2006, Madison, WI

Title: Genetic Footprinting of Venezuelan Equine Encephalitis Virus nsP3
Brett Beitzel and Connie Schmaljohn

Venezuelan equine encephalitis virus (VEEV) is a New World Alphavirus endemic to regions of South America. Normally maintained in a rodent reservoir, VEEV can be transmitted by mosquitoes to horses and humans where it can cause debilitating and potentially fatal encephalitis. Partially because of its pathogenesis in humans, VEEV is listed as a Category B select agent by the CDC.

The 5' two-thirds of of the VEEV genome (as in all alphaviruses) encodes four non-structural proteins, nsP1 - nsP4, that are involved in replication of the viral genome. Through biochemistry assays and sequence comparison to proteins with known activities, functions have been assigned to nsP1, nsP2, and nsP4. However, relatively little is known about the function of nsP3.

We performed genetic footprinting on VEEV nsP3 in an attempt to better understand its role in viral replication. Using a modified MuA transposon, we generated a library of nsP3 insertional mutants, wherein each clone contained a single 15-base pair insertion randomly positioned in the nsP3-coding region. We used this library and a VEEV reverse genetics system to generate a pool of replication-competent viruses. Analysis of the insertion sites in our pool of replication-competent viruses, and comparison to the insertion sites in our starting library allowed us to identify functionally important regions in nsP3. We also identified several regions in VEEV nsP3 that will tolerate insertions at 30oC, but not at 37oC or 40oC, and are attempting to generate temperature-sensitive viruses based on these data.

The results that we have obtained from genetic footprinting, combined with information on the replication characteristics of temperature-sensitive viruses designed from the footprinting information will increase our understanding of the functions of nsP3 in VEEV replication.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *POST-TENURE POSITION TITLE*

Principal Investigator

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

USAMRIID

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☒ Remain at Host Agency as Contract/Temporary Employee
  - **Abbreviate Host Laboratory/Center** **USAMRIID**
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

§ Development of knowledge, skills, and research productivity

Comments

The NRC RAP has given me the freedom to work very independently, and develop several promising avenues of research that I can take with me. During my NRC tenure I have worked on high risk / high reward projects that have taken a while to pay off, but I am confident that the techniques that I have developed, and am developing will allow me to be very productive over the next couple of years.

LONG TERM VALUE

§ How the National Academies Associateship award affected your career to date

Comments

The RAP has allowed me to develop my own research interests that will help guide my career, and allow me to be a productive scientist.

LAB SUPPORT

8 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.

Comments

Research has been great, bureaucracy not so great (but that is no big surprise for a government lab!)

ADVISER/MENTOR SUPPORT

9 Quality of mentoring from the Lab NRC Adviser (USMA Mentor, if applicable)

Comments

Dr. Schmaljohn has been an excellent advisor. She is very hands-off, but helpful when needed.

LPR SUPPORT

8 Quality administrative support from the LPR

Comments

NRC SUPPORT

9 Quality of administrative support from the NRC

Comments

Administrative support from the NRC has always been very helpful and friendly.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

This hasn't affected me, but several people that I know will be affected by the NRCs recent decision to include travel as income reported to the IRS. We have some associates that travel to far-off places during the course of their NRC tenure, and these trips can run into many thousands of dollars. If those costs are included as income, the NRC associates could be stuck with a hefty tax bill for work-related travel. I think this policy should be reconsidered.

W PA Fiscal BRap

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Research Associateship Programs

FINAL REPORT

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Bhonsle	Jayendra	B

2) *FORWARDING Address* (for tax statement / final stipend check)	*FORWARDING Phone(s) and E-Mail* (if known)
13592 Waterford Hills Boulevard Germantown, MD 20874-4655	Home phone: (301) 916-6563 Alt. phone: (240) 441-0316 E-mail: jbhonsle@yahoo.com

3) *Today's Date*	*Dates of Tenure*
December 26, 2007	from July 6, 2004 to January 4, 2008

4) *Agency*	*Laboratory or Center*	*Division / Branch / Department*
AMRMC	WRAIR	Exp. Therapeutics / Medicinal Chem

5) *NAME OF RESEARCH ADVISER* (and USMA Mentor, if applicable)
LTC Michael P. Kozar

6) *TITLE OF RESEARCH PROPOSAL*

In Silico Molecular Modeling and Structure Based Approaches to Design and Discovery of Potential Therapeutic Agents

7) *SUMMARY OF RESEARCH DURING TENURE* Itemize significant findings in concise form, utilizing key concepts/words.

1) Highly predictive 3D-QSAR models of Insect Repellents of DEET analogs and derivatives.
2) DeNovo design of broad spectrum Antimicrobial Peptides (AMP).
3) 3D-QSAR models of AMP against Staphyllococcus aureus and Mycobacterium ranae.
4) Development of "bioactive conformer mining" method for predictive 3D-QSAR model.
5) 3D-QSAR models for antimalarial Pf-FABH inhibitors and mefloquine analogs & derivatives.

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

DEC 27 2007

8) *RESEARCH IN PROGRESS* Describe in no more than 100 words.

3D-QSAR model development for AMP against Bacillus Subtilus and Salmonella typhimurium is in it's final stages. Method development for predictive pharmacophore generation based on computational brute force approach of exhaustive exploration of all algorithm parameters is in its final stages. Application of machine learning methods such as Artificial Neural Network for development of predictive ADME models for bioavailability and half-life predictions has been initiated and explored. Application of Artificial Neural Network and Self Organizing maps methods for prediction of biologically relevant conformation from a pool of conformations is in progess.

9) *1*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

1) Jayendra B. Bhonsle, Raj K. Gupta and Apurba K. Bhattacharjee
Novel semi-automated methodology for developing highly predictive QSAR models: Application for development of QSAR models for insect repellent amides.
Journal of Molecular Modeling, 13(1), 179-208, (2007).

2) Rickey P. Hicks, Jayendra B. Bhonsle, Divakaramenon Venugopal, Brandon W. Koser and Alan J. Magill.
De Novo Design of Selective Antibiotic Peptides by Incorporation of Un-natural amino acids.
Journal of Medicinal Chemistry 50(13), 3026-3036, (2007).

3) Jayendra B. Bhonsle, Divakaramenon Venugopal, Donald P. Huddler, Alan J. Magill, and Rickey P. Hicks
Application of 3D-QSAR for Identification of Descriptors Defining Bioactivity of Antimicrobial.
Journal of Medicinal Chemistry 50(26), 6545–6553, (2007).

4) Jayendra B. Bhonsle, and Donald Huddler
Novel Method For Mining QSPR Relevant Conformations.
Chemical Engineering Communications (2007) in press.

b) Books, book chapters, other publications

Jayendra B. Bhonsle, and Donald Huddler.
QSAR: A powerful tool for drug design in combating infectious diseases.
Invited Book Chapter in "Genomic and Computational Tools for Emerging Infectious Diseases"
Edited by Willy Valdivia-Granda; Springer Science+Business Media, Inc., New York, NY, USA.
Communicated/Submited. Anticipated publication date is in early 2008.

c) Manuscripts in preparation, manuscripts submitted

1) Jayendra B. Bhonsle, and Donald Huddler
A comparative study of 3D-QSAR models of bacterial Enoyl Acyl Carrier Protein Reductase (FabI) inhibitors.
Journal of Chemical Information and Modeling (2008) in preparation.
2) Jayendra B. Bhonsle, Norman Waters, and Donald Huddler.
A comparative study of 3D-QSAR models of Plasmodial falciparum betaKetoacyl ACP Synthase III (pfKASIII) inhibitors.
Journal of Chemical Information and Modeling (2008) in preparation.
3) Jayendra B. Bhonsle, Tiffany N. Heady, Geoffrey S. Dow, and Donald Huddler
A comparative study of 3D-QSAR models of Mefloquine based antimalarials.
Quantitiative Structure Activity Relationships and Combinatorial Chemistry (2008) Communicated/Submited.

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM THE NRC ASSOCIATESHIP RESEARCH PROGRAM*
Provide titles, inventors, and dates of applications.

Novel Anti-microbial Peptidomimetic Compounds and Methods to Calculate Anti-microbial activity.
Rickey P. Hicks, Jayendra B. Bhonsle, and Divakaramenon Venugopal
Filed on December 20, 2007.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

1) Jayendra B. Bhonsle and Michael P. Kozar
Title of Talk: Computational methods to Drug Design and Discovery.
Invited Talk: 5th YoungChem 2007 International Conference of Young Chemists. Jurata, Poland.
October 10 – October 14, 2007
2) Jayendra B. Bhonsle and Donald Huddler
Novel Method For Mining QSPR Relevant Conformations.
Keynote address at International Conference on Modeling in Chemical and Biological Engineering Sciences.
Bangkok, Thailand. October 25 – October 27, 2006
3) Jayendra B. Bhonsle, Raj K. Gupta, and Apurba K. Bhattacharjee
Title of Poster: QSAR studies of insect repellents and design of better insect repellent: An automated approach for QSAR model development of insect repellents.
XVIth International Congress for Tropical Medicine and Malaria. Marseilles, France.
September 11- September 15, 2005.
4) Jayendra B. Bhonsle, Raj K. Gupta, and Apurba K. Bhattacharjee
Title of Poster: QSAR studies of insect repellents and design of better insect repellent. A semi-automated approach for predictive QSAR model of insect repellents using scripted common molecular modeling tools and a novel method for test set compounds activity prediction.
Fourth Indo-US Conference on Mathematical Chemistry. Pune, India.
January 8 - January 12, 2005.

Domestic

1) Jayendra B. Bhonsle and Donald Huddler
A comparative study of 3D- QSAR models of bacterial Enoyl Acyl Carrier Protein Reductase (FabI) inhibitors.
Invited oral paper presentation at the Accelrys Users Meeting & Conference 2006, Baltimore, MD. November 14, 2006.
2) Jayendra B. Bhonsle and Apurba K. Bhattacharjee
Title of Poster: QSAR studies of bacterial Enoyl Acyl Carrier Protein Reductase (FabI)
ASTMH 54th Annual Meeting. Washington D.C. December 11- December 15, 2005
3) Jayendra B. Bhonsle, Raj K. Gupta, and Apurba K. Bhattacharjee
Title of Poster: QSAR studies of insect repellents and design of better insect repellent: Insights into mechanism of action of DEET analogs.
PharmaDiscovery 2005. Washington, D.C. May 10 - May 12, 2005

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

November 13, 2006. Title of Talk: Computational Methods for Drug Design and Discovery. Invited for Seminar at the "COLLOQUIUM OF THE COMPUTATIONAL MATERIALS SCIENCE CENTER College of Science", Computational Materials Science Center, George Mason University, Fairfax, VA.

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

None

14) *POST-TENURE POSITION TITLE*

Senior Research Scientist

15) *POST-TENURE ORGANIZATION* **Provide name and city of organization.**

Walter Reed Army Institute of Research, Silver Spring, Maryland.

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- [ ] Remain at Host Agency as Permanent Employee
- [x] Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center WRAIR
- [ ] Research Position at Another US Government Laboratory
- [ ] Administrative Position at US Government Laboratory
- [ ] Research Position at Foreign Government Laboratory
- [ ] Research/Teaching at US College/University
- [ ] Research/Teaching at Foreign College/University
- [ ] Research/Administration in Industry
- [ ] Research/Admin in Non-Profit Organization
- [ ] Postdoctoral Research
- [ ] Self Employed
- [ ] Other: specify _____

17) *APPRAISAL OF NRC RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

10 Development of knowledge, skills, and research productivity
Comments

LONG TERM VALUE

10 How the National Academies Associateship award affected your career to date
Comments

LAB SUPPORT

7 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.
Comments

ADVISER / MENTOR SUPPORT

8 Quality of mentoring from the Lab NRC Adviser (USMA Mentor, if applicable)
Comments

LPR SUPPORT

8 Quality administrative support from the LPR
Comments

NRC SUPPORT

7 Quality of administrative support from the NRC
Comments

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

P. A. Fiscal SRap

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine
National Research Council

Research Associateship Programs

FINAL REPORT

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Enterlein	**Sven**	**G**

2) *FORWARDING Address* (to which your tax statement will be mailed)

Res. or Inst. **Res**
Street **1194 Schaffer Drive**
City, State Zip **Frederick, MD 21702**

FORWARDING Phone(s) and E-Mail (if known)
Home Phone: 409 392 3976
Alt. Phone:
E-mail: sven.enterlein@gmx.net

3) *Today's Date*: **July 10, 2007**

Dates of Tenure: from **December 18, 2006** to **July 1, 2007**

4) *Agency*	*Laboratory or Center*	*Division / Directorate / Department*
	USAMRIID	**Bacteriology**

5) *Name of Laboratory NRC Adviser* (and USMA Mentor, if applicable)
Dr. Sina Bavari, sina.bavari@us.army.mil

6) *TITLE OF RESEARCH PROPOSAL*

Mutational analysis of the structure-function relationship of Ebolavirus matrix protein VP40

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) **Extensive research of protein interactions of Marburg and Ebola virus and the host cell**
2) **Finalized a review on antisense molecules against filoviruses**
3) **Gained insight into organizing a lab**
4)
5)

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

Proteomics profiling the proteins involved in Ebola- and Marburg virus life cycle; inhibition experiments with siRNAs and overexpression with plasmid-based systems; mode of action of small molecule inhibitors against various viruses

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Antisense-based therapeutics against Ebola and Marburg viruses", Review, Enterlein et al., Expert Opinions in Biological Therapeutics (awaiting publication), "Ebola virus proteomics", Enterlein et al. (in preparation)

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

N/A

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

N/A

Domestic

N/A

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

N/A

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

N/A

14) *POST-TENURE POSITION TITLE*

Director of Molecular Biology

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

Integrated BioTherapeutics Inc, 4539 Metropolitan Ct, Frederick, MD 21704

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☒ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*

On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

9 Development of knowledge, skills, and research productivity
Comments
the lab was very well equipped; highly skilled personnel

LONG TERM VALUE

10 How the NRC Associateship award affected your career to date
Comments
prestigiousness of the tenure invaluable for my new (O-1) visa approval

LAB SUPPORT

8 Quality of support from the Laboratory--equipment, funding, orientation, safety and health guidelines, etc.
Comments
No problems encountered

ADVISER/MENTOR SUPPORT

10 Quality of mentoring from the Laboratory NRC Adviser (USMA Mentor, if applicable)
Comments
Never received any better support!

LPR SUPPORT

9 Quality of administrative support from the **L**aboratory (e.g., NIST) NRC **P**rogram **R**epresentative (LPR)
Comments
Very friendly and helpful

NRC SUPPORT

8 Quality of administrative support (applications, inquiries, post-review, award-related, travel, etc.) from the NRC
Comments
Timely responses and friendly contact

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

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Research Associateship Programs

FINAL REPORT

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Jones	**Juli**	**E**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. **Res** Street **298 Potter Rd** City, State Zip **Framingham MA 01701**	**Home Phone: 617-285-0853** **Alt. Phone:** **E-mail: jones530@gmail.com**

3) *Today's Date*	*Dates of Tenure*
January 3, 2008	from **February 6, 2006** to **February 5, 2008**

4) *Agency*	*Laboratory or Center*	*Division / Directorate / Department*
AMRMC	**USARIEM**	**TMD**

5) *Name of Laboratory NRC Adviser* (and USMA Mentor, if applicable)
Dr. Allen Cymerman

6) *TITLE OF RESEARCH PROPOSAL*

Effect of erythropoietin administration on the prevention of AMS and cognitive performance deficits in humans ascending to high altitude

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) Determined that erythropoietin and soluble transferring receptor, measured by enzyme linked immunosorbent assay (ELISA), is not altered after 7 days of intermittent hypoxic exposures.

2) Determined that while cardiac output during submaximal and maximal cycle ergometry is not altered after 7 days of intermittent hypoxic exposure, arterial oxygen saturation is improved.

3) Determined that while sleep quality and quantity are not altered after 7 days of intermittent hypoxic exposure, arterial oxygen saturation is improved.

4) Weapon disassembly/reassembly performance is related to Acute Mountain Sickness but not hypoxemia At 4300 M

5)

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

JAN 3 2008

During my time at USARIEM I have been involved with the ongoing high altitude studies in which I have learned many techniques in the exercise science field. These new techniques include, VO2 max testing, Sub-maximal testing, cognitive performance evaluation, cardiac output and resting ventilation measurements. In the current study I have focused on the effects of intermitent hypoxic exposure on physical performance at 4300m as well as determining if intermitent hypoxic exposure allevieates decrement in sleep at high altitude.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Juli E. Jones, Michael L. Tapia, Stephen R. Muza, Charles S. Fulco, Beth A. Beidleman, and Allen Cymerman. Normobaric IHE conditioning does not improve sleep at 4300 M. High Altitude Biology. Manuscript in prepration.

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

1. Muza, S.R., Fulco C.S., Beidleman B.A., Jones, J.E., Staab, J.E., Elliott, S., Money, A. and Cymerman, A. 2007. Ventilatory acclimatization during and following normobaric intermittent hypoxic exposures in lowlanders. Mountain and Wilderness Medicine World Congress 2007

2. Jones, J.E., Muza, S.R., Fulco, C.S., Beidleman, B.A., Tapia, M.L., Lammi, E.R., Elliott, L.D. and Cymerman, A. 2007. Poster: Normobaric intermittent hypoxic exposures improve foot march performance at 4300 M. The 15th International Hypoxia Symposium, Lake Louise, Canada. High Altitude Medicine & Biology. 2006, 7(4): 319-350.

3. Beidleman, B.A, Muza, S.R., Fulco, C.S., Staab, J., Lammi, E.R., Jones, J.E., and Cymerman, A. 2007. Poster: Normobaric intermittent hypoxic exposures does not alter cardiorespiratory responses during steady-state exercise at 4300 M. The 15th International Hypoxia Symposium, Lake Louise, Canada. High Altitude Medicine & Biology. 2006, 7(4): 319-350.

Domestic

1. Staab, J.E., Muza, S.R., Beidleman B.A., Fulco C.S., Staab J.S., Jones J., Reese, M.L., and Cymerman, A. 2008. Erythropoietin (EPO) and Soluble Transferrin Receptor (sTfR) Responses at 4300 m Before and After Normobaric Intermittent Hypoxic Exposure. Experimental Biology Annual Meeting.

2. Muza, S.R., Fulco C.S., Beidleman B.A., Jones, J.E., Staab, J.E., Elliott, S., Lammi, E.R., and Cymerman, A. 2008. Lowlander time trial performance at 4300 M is not improved following a normobaric intermittent hypoxic exposure program. 55th Annual meeting of the American College of Sports Medicine.

3. Fulco C.S., Muza, S.R., Beidleman B.A., Jones, J.E, Lammi, E.R., Kambis, K., Doan, B.K., Brothers, M.D., Zupan, M.F., and Cymerman, A. 2008 Living for six days at 2200 m improves prolonged time-trial performance of sea-level residents exposed to 4300 m. 55th Annual meeting of the American College of Sports Medicine.

4. Fulco, C.S., Muza, S.R., Beidleman, B.A., Jones, J.E., and Cymerman, A. 2007. Poster: Intermittent hypoxic exposure improves time-trial performance in hypoxia but not in normoxia. Experimental Biology.

5. Elliott, S., Muza, S.R., Fulco, C.S., Beidleman, B.A., Tapia, M.L., Lloyd, E., Jones, J.E., and Cymerman, A. 2007. Presentation: Weapon Disassembly/Reassembly Performance Is Related To Acute Mountain Sickness And Not Hypoxemia At 4300 M. 54th Annual meeting of the American College of Sports Medicine.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

Guest Lecture: Emmanuel College Monthly Science Seminar Series. High Altitude: Optimizing Physical Performance in Mountain Environments. Feburary 2007

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

Professional Certification: American College of Sports Medicine. Health and Fitness Instructor® certification. Certificate number 1002307, 2006

14) *POST-TENURE POSITION / JOB TITLE*

Contract Scientist

15) *NAME AND ADDRESS OF POST-TENURE POSITION / JOB 0RGANIZATION*

USARIEM, 42 Kansas St. Natick MA 01760

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☒ Remain at Host Agency as Contract/Temporary Employee
  - **Abbreviate Host Laboratory/Center** **USARIEM**
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*

On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

8 Development of knowledge, skills, and research productivity
Comments

LONG TERM VALUE

5 How the NRC Associateship award affected your career to date
Comments

LAB SUPPORT

9 Quality of support from the Laboratory--equipment, funding, orientation, safety and health guidelines, etc.
Comments

ADVISER/MENTOR SUPPORT

10 Quality of mentoring from the Laboratory NRC Adviser (USMA Mentor, if applicable)
Comments

LPR SUPPORT

10 Quality of administrative support from the **L**aboratory (e.g., NIST) NRC **P**rogram **R**epresentative (LPR)
Comments

NRC SUPPORT

10 Quality of administrative support (applications, inquiries, post-review, award-related, travel, etc.) from the NRC
Comments

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine
National Research Council

CV PA Fiscal HT Drop

Research Associateship Programs

FINAL REPORT

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Noble	**Schroeder**	**M**

2) *FORWARDING Address* (to which your tax statement will be mailed)
Res. or Inst. Residence
Street 304 Prettyman Dr. #10205
City, State Zip Rockville, MD 20850

FORWARDING Phone(s) and E-Mail (if known)
Home Phone: 919-357-1989
Alt. Phone: 301-319-9489
E-mail: schroeder.noble@amedd.army.mil

RECEIVED AUG 8 2007 ASSOCIATESHIP PROGRAMS

3) *Today's Date*
August 6, 2007

Dates of Tenure
from October 3, 2005 to August 17, 2007

4) *Agency*	*Laboratory or Center*	*Division / Directorate / Department*
AMRMC	**WRAIR**	**Experimental Therapeutics**

5) *Name of Laboratory NRC Adviser* (and USMA Mentor, if applicable)
CPT Donald P. Huddler

6) *TITLE OF RESEARCH PROPOSAL*

Structural Studies of P.falciparum Hsp90 for the Development of Anti-malarial Therapeutics

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) The ATPase domain of S.cerevisiae Hsp90 was crystallized in the presence of the inhibitor Indo3 and preliminary data was collected.

2) We have completed cloning, expression and purification of full-length Plasmodium falciparum Hsp90, ATPase domain PfHsp90, and an ATPase-middle domain fusion construct of PfHsp90.

3) Crystallization trials were started for the PfHsp90 ATPase-middle domain fusion construct.

4) PfHsp90 interaction partners have been identified by using a pull-down assay.

5) An E.coli HTS C142A mutant was crystallized and a complete data set was collected from crystals diffracting to 2.8 Å .

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

a) Crystallization trials with full-length PfHsp90 and the ATPase domain in the absence and presence of inhibitors are in progress.
b) Crystallization experiments with PfHsp90 and client proteins are in progress.
c) An ATPase assay with purified full-length PfHsp90 in the presence of client proteins will be optimized.
d) Process yHsp90N+Indo3 data and determine the structure
e) Immunopurify PfHsp90 chaperone complex from heat-stressed parasites
f) Process E.coli HTS C142A mutant data and determine the structure

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

Identification of catalytic cysteine, histidine, and lysine residues in Escherichia coli homoserine transsuccinylase. Ziegler K, Noble SM, Mutumanje E, Bishop B, Huddler DP, Born TL. Biochemistry. 2007 Mar 13;46(10):2674-83.

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

Structural Studies of the Methionine Biosynthesis Enzyme Homoserine Transsuccinylase from Escherichia Coli. Noble S, Born TL, Huddler DP. American Crystallographic Association in Honolulu, Hawaii July 22-27, 2006

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *POST-TENURE POSITION TITLE*

Research Chemist

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

Walter Reed Army Institute of Research
Division of Biochemistry
503 Robert Grant Ave.
Silver Spring, MD 20910

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☒ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

9 Development of knowledge, skills, and research productivity
Comments

LONG TERM VALUE

10 How the NRC Associateship award affected your career to date
Comments

LAB SUPPORT

9 Quality of support from the Laboratory--equipment, funding, orientation, safety and health guidelines, etc.
Comments

ADVISER/MENTOR SUPPORT

10 Quality of mentoring from the Laboratory NRC Adviser (USMA Mentor, if applicable)
Comments

LPR SUPPORT

9 Quality of administrative support from the **L**aboratory (e.g., NIST) NRC **P**rogram **R**epresentative (LPR)
Comments

NRC SUPPORT

10 Quality of administrative support (applications, inquiries, post-review, award-related, travel, etc.) from the NRC
Comments

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

Mail & Delivery Address
NRC Research Associateship Programs
The National Academies
500 Fifth Street NW, 5th Fl. Rm. 568
Washington, DC 20001

THIS FORM SHOULD BE E-MAILED
directly to your NRC coordinator

http://www7.national-academies.org/rap

Suggestions for, or problems with, forms should be directed to the forms manager, Suzanne White, at swhite@nas.edu

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THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine
National Research Council

Research Associateship Programs

FINAL REPORT

Print Layout View

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Nicoll	**William**	**S**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. **Richmond Iris Garden** Street **376 Hill St, Richmond** City, State Zip **Nelson 7020, New Zealand**	**Home Phone: +64 3 5446513** **Alt. Phone: -** **E-mail: wil.nicoll@gmail.com**

3) *Today's Date*	*Dates of Tenure*
March 18, 2007	from **April 1, 2005** to **March 31, 2007**

4) *Agency*	*Laboratory or Center*	*Division / Directorate / Department*
AMCOM	**WRAIR**	**Malaria Vaccine Development**

5) *Name of Laboratory NRC Adviser* (and USMA Mentor, if applicable)

David Lanar

6) *TITLE OF RESEARCH PROPOSAL*

Characterization of Plasmodium falciparum liver stage antigen LSA1

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) Transglutaminase 2 and Casein kinase 2 sites discovered in LSA1 through bioinformatic analysis

2) LSA1 found to be crosslinked by transglutaminase 2 invitro

3) LSA1 found to be phosphorylated by Casein kinase 2 invitro

4) LSA1 is identified in vivo using LSA1 specific antibodies in plasmodium flaciparum infected chimeric mice containing functional human livers

5) Transglutaminase 2 crosslinking is identified in plasmodium flaciparum infected chimeric mice containing functional human livers

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

An LSA1 knockout plasmodium strain has been obtained and is in the process of being tested to asess the necessity of LSA1 in plasmodium falciparum liver stage development. We have identified transglutaminase crosslinked LSA1 homologs in mouse malarial agents plasmodium berghei and plasmodium yoelli. Analysis of these homologs will yield further information on the role of LSA1.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Nicoll W.S., Sacci, J.B., Rodolfo, C., Piacentini, M., Holland, Z.J.M., Hollingdale, M., Lanar, D.E. (2007) Plasmodium falciparum Liver Stage Antigen-1 is crosslinked by tissue transglutaminase. Journal of Biological Chemistry (In Prep)

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NATIONAL ACADEMIES ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Nicoll W.S., Sacci, J.B., Rodolfo, C., Piacentini, M., Kappe, S., Lanar, D.E. (2006) Plasmodium falciparum Liver Stage Antigen-1 is polymerized by tissue transglutaminase. XIth International Congress of Parasitology, Abstract 816, Glasgow, United Kingdom

Abstract

The initial step in human infection with cerebral malaria is the injection of mosquito born Plasmodium falciparum sporozoites into the blood stream. The sporozoites rapidly infect hepatocytes of the liver and subsequently undergo liver pre-erythrocytic developmental schizogony to form tens of thousands of merozoites. Shortly after invasion the parasite starts to produce Liver Stage Antigen-1 (LSA1) which is transported into the parasitophorous vacuole space where it forms a flocculent mass of protein. The central region of the LSA1 native protein comprises 86 repeats of a 17 amino acid unit that contains a potential substrate motif for tissue transglutaminase-2 (TG2), an enzyme found in all human tissues and known to be up-regulated in damaged liver. TG2 posttranslationally modifies proteins by formation of inter- and intra-protein crossbridges between glutamine and lysine residues. We have shown that a recombinant LSA1 protein (rLSA1) is cross-linked in vitro by purified recombinant guinea pig TG2. Furthermore, rLSA1 is cross-linked by both cell extracts of a human tissue transglutaminase-2 (hTG2) expressing cell line, and purified recombinant hTG2. In addition, we have studied native LSA1 expression in infected, chimeric mice containing functioning human livers. Co-localization of LSA1 and specific TG2 crosslinking by immunofluorescence was seen using a polyclonal antibody to rLSA1, as well as two different monoclonal antibodies specific to TG2 catalyzed cross-bridges. We hypothesize that the function of P. falciparum LSA1 is to form a protective elastic wall around the developing parasite to shield it from the immune system and/or provide structural integrity to the PV within the dying hepatocyte.

Domestic

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

Best cellular biology poster - XIth International Congress of Parasitologist, Abstract 816, Glasgow, United Kingdom

14) *POST-TENURE POSITION TITLE*

Unknown

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

Unknown

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☒ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*

On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

9 Development of knowledge, skills, and research productivity

Comments

LONG TERM VALUE

8 How the National Academies Associateship award affected your career to date

Comments

LAB SUPPORT

7 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.

Comments

ADVISER/MENTOR SUPPORT

8 Quality of mentoring from the Lab NRC Adviser (USMA Mentor, if applicable)

Comments

LPR SUPPORT

8 Quality administrative support from the LPR

Comments

NRC SUPPORT

8 Quality of administrative support from the NRC

Comments

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

Please adress the following issues:

Health insurance cover is minimal at best - suitable for a major accident but not good for day to day medical care. This isnt obvious when an associate first arrives. And a dental program is definitely needed.

It is my understanding that Tax forms are required by law to be sent by Jan 31st however every year of my tenure tax forms do not arrive until almost april - this is unacceptable, especially where new NRC fellows do not know the tax system very well and are often tight for funds.

US Postal Service mailing address **THIS FORM SHOULD BE E-MAILED** **Express Delivery address**

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine
National Research Council

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DEC 1 8 2007

Research Associateship Programs

FINAL REPORT

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Ruff	**Albert**	**L**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. **Residence** Street **2831 Meredith Court** City, State Zip **Abingdon, MD 21009**	**Home Phone: 443-512-8510** **Alt. Phone: 410-436-8456** **E-mail: albert_ruff@hotmail.com**

3) *Today's Date*	*Dates of Tenure*
December 17, 2007	from **6/28/2006** to **January 6, 2008**

4) *Agency*	*Laboratory or Center*	*Division / Directorate / Department*
AMRMC	**USAMRICD**	**Research**

5) *Name of Laboratory NRC Adviser* (and USMA Mentor, if applicable)

Dr. James Dillman

6) *TITLE OF RESEARCH PROPOSAL*

Analysis of signal transduction events and application of RNAi (inhibitory RNA) to accelerate therapeutic development for SM-induced cutaneous and ocular injury

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) p38 MAP kinase (p38) regulates sulfur mustard-induced cytokine production in normal human keratinocytes (NHEK).

2) NF-κB, though widely implicated, is not involved in sulfur mustard (SM)-induced inflammatory cytokine production by NHEK with the possible exception of a partial role in the stimulation of IL-1β production.

3) p38 regulates SM-induced cytokine production independent of NF-κB and p53 signaling.

4) Inhibition of p53 by inhibitory RNA (RNAi) acceleted SM-induced cell death and phenotypic changes suggesting a possible cell survival role for p53 in SM-exposed NHEK.

5) Inhibition of NF-κB by RNAi delayed SM-induced death and attenuated SM-induced cell phenotypic changes suggesting that NF-κB may play a pro-apoptotic or pro-necrotic role in SM-exposed NHEK.

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

The findings described above have led to a new line of research in which the molecular mechanisms of SM injury will be studied in a mouse model of ocular injury (a FY 2008-2010 new start proposal funded by DTRA). This research will focus on the role of IL-6, VEGFA, and TGF-β because these have been shown to play a critical role in corneal vascularization and fibrosis by multiple types of ocular injury. We will also evaluate therapeutic RNAi that has been proven to be effective in treating these corneal pathologies in animal models and appears promising for use in humans.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

Albert L. Ruff and James F. Dillman III. Signaling Molecules in Sulfur Mustard-Induced Cutaneous Injury, Journal of Burns and Wounds, Manuscript accepted and scheduled for publication in 2008.

b) Books, book chapters, other publications

c) Manuscripts in preparation, manuscripts submitted

Albert L. Ruff and James F. Dillman III. p38 MAP Kinase Regulates Sulfur Mustard-Induced Cytokine Production Independent of NF-κB and p53 Signaling, but does not Regulate Sulfur-Mustard-Induced Cell Death. Manuscript in preparation

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Albert L. Ruff and James F. Dillman III. RNAi Targeted Against p38MAPK Effectively Inhibits Inflammatory Cytokine Production in Sulfur Mustard Injury. Poster presentation at the International Congress of Toxicology XI, 2007, Montreal, Canada

Domestic

Albert L. Ruff and James F. Dillman III. p38 MAP Kinase Regulates Sulfur Mustard-Induced Cytokine Production Independent of NF-kB and p53 Signaling and Does Not Regulate SM-Induced Cell Death. Accepted for a posted presentation at the Society of Toxicology 47th Annual Meeting, March 16-20, 2008. Seatle, Washington

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

Albert L. Ruff. Molecular Mechanisms of Sulfur Mustard Toxicity: Dissecting the Inflammatory and Cell Death Signaling Pathways Utilizing RNAi. University of Delaware. October 11, 2007

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *POST-TENURE POSITION / JOB TITLE*

Principal Investigator / Research Biologist

15) *NAME AND ADDRESS OF POST-TENURE POSITION / JOB 0RGANIZATION*

USAMRICD
Research Division,
Cell and Molecular Biology Branch
3100 Ricketts Point Road
APG, MD 21010

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☒ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*

On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

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Comments

LONG TERM VALUE

10 How the NRC Associateship award affected your career to date
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ADVISER/MENTOR SUPPORT

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Comments

LPR SUPPORT

10 Quality of administrative support from the **L**aboratory (e.g., NIST) NRC **P**rogram **R**epresentative (LPR)
Comments

NRC SUPPORT

10 Quality of administrative support (applications, inquiries, post-review, award-related, travel, etc.) from the NRC
Comments
Some forms could be made more intuitive.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

1. Dental insurance - Affordable dental insurance for individuals or families is available through Delta Dental. I would recommend looking at the plans offered by Delta Dental and provide this information to applicants or exisitng associates.

2. Mortgage issues - Buying a house as an NRC associate can be difficult because given the method by which we are paid, many mortgage companies view associates as being self-employed. It would be helpful if the NRC could find a mortgage company (or companies) that understands our unique pay situation and is willing to work with NRC associates.

PA Fiscal Stap

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine
National Research Council

DEC 1 9 2007

Research Associateship Programs

FINAL REPORT

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Swanson	Katherine	I

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. Street 520 South Ellwood Ave. City, State Zip Baltimore, MD 21224	Home Phone: (410) 905-0190 Alt. Phone: E-mail: katherine.swanson@gmail.com
3) *Today's Date* December 18, 2007	*Dates of Tenure* from November 21, 2005 to December 31, 2007

4) *Agency*	*Laboratory or Center*	*Division / Directorate / Department*
AMRMC	WRAIR	Entomology

5) *Name of Laboratory NRC Adviser* (and USMA Mentor, if applicable)
LTC (P) Russell E. Coleman

6) *TITLE OF RESEARCH PROPOSAL*

Determination of Genetic Diversity of Phlebotomine Sand Flies and Leishmania Parasites in Iraq and Afghanistan

7) *SUMMARY OF RESEARCH DURING TENURE* Itemize significant findings in concise form, utilizing key concepts/words.

1) Sequence analysis of sand fly pools for Leishmania gpi gene fraqment yielded mainly L. tarentolae and a non-Leishmania sequence similar to Anopheles gambiae gpi.

2) Medically-important Leishmania sequences (L. major, L. tropica, L. infantum) were identified from sand fly pools from Iraq and Afghanistan. In addition, a sequence similar to both L. major and L. tropica was identified.

3) Confirmatory sequencing for Leishmania using the internal transcribed spacer (ITS) fragment was unsuccessful due to variations within the sequence. However, Leishmania was detected through PCR for the ITS fragment.

4) Working through a CRADA with Human Genetic Signatures, INA Technology has been utilized to develop blocking primers for the non-Leishmania sequences in order to determine whether Leishmania sequences can be obtained from the samples.

5) A fragment of the cytochrome c oxidase I was amplified from sand fly genomic DNA for the identification of sand fly species using a combination of real-time PCR with SYBR Green and Melting Curve Analysis.

(USMA Davies Fellow: please add summary of teaching, including classes taught.)
N/A

8) *RESEARCH IN PROGRESS* Describe in no more than 100 words.

Relying on the genetic diversity in the COI gene reported by other researchers, the current research has aimed to differentiate eight sand fly species using real-time PCR and melting curve analysis. Using published primers, the COI fragment was amplified and sequenced in order to design primers more appropriate for real-time PCR. The intercalating dye SYBR Green is used for detection of double-stranded DNA prior to melting curve analysis. The melting temperature of each species should differ based on the DNA sequence, allowing for species identification. The results have shown that two New World species of sand flies tested cannot be identified with this assay; however, the assay does show promise in differentiating between 6 Old World species from Phlebotomus spp. and Sergentomyia spp.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

N/A

b) Books, book chapters, other publications

N/A

c) Manuscripts in preparation, manuscripts submitted

McAvin, J.C., R.E. Coleman, L.P. Hochberg, K.I. Swanson, A.S. Chan, E.D. Rowton, D. Teng, M.D. Powers, M. Quintana, K.W. Blount, D.M. Niemeyer, J.A. Swaby. Evaluation of field-deployable fluorogenic probe-based PCR

assays for Leishmania screening and visceral leishmaniasis causative agent identification in sand flies. J. Med. Entomol. Submitted 2007.

Swanson, K.I., J.S. Lee, J.L. Groebner, M.L. O'Guinn, L.P. Hochberg, R.E. Coleman. Identification and phylogenetic analysis of Leishmania spp. isolated from sand flies captured in Iraq and Afghanistan. Submitted 2007.

Coleman, R.E., K.I. Swanson, L.P. Hochberg, J.S. Lee, J.C. McAvin, D.O. Eddington, M. Moodie, L. Gilmore, W. Gilmore, M.L. O'Guinn, J.L. Putnam. Impact of phlebotomine sand flies on U.S. military operations at Tallil Air Base, Iraq: 4. Detection and identification of Leishmania parasites in sand flies. J. Med. Entomol. Submitted 2008.

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

N/A

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

N/A

Domestic

Coleman, R.E., J.C. McAvin, J.L. Putnam, J.S. Lee, K.I. Swanson, M.L. O'Guinn, M. Moodie, E.D. Rowton, and L.P. Hochberg. Assessment of sand flies as a means of evaluating the threat of leishmaniasis to military forces deployed to Iraq and Afghanistan. The 73rd American Mosquito Control Association Annual Meeting. Orlando, FL. April 2007.

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* Include dates, names and locations of seminars.

N/A

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

N/A

14) *POST-TENURE POSITION / JOB TITLE*

Technology Transfer Liaison

15) *NAME AND ADDRESS OF POST-TENURE POSITION / JOB ORGANIZATION*

Henry M. Jackson Foundation
1401 Rockville Pike, Suite 600
Rockville, MD 20852

16) *POST-TENURE POSITION STATUS / CATEGORY* Please indicate only one.

- ☐ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☒ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: specify _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

☒ Development of knowledge, skills, and research productivity
Comments
I was able to work independently but also collaborated with other researchers in government labs and industry which allowed for development opportunities.

LONG TERM VALUE

☒ How the NRC Associateship award affected your career to date
Comments
Due to my Associateship, I have been able to complete a postdoctoral fellowship. At the same time, I learned about and developed an interest in technology transfer, leading to my next position.

LAB SUPPORT

☒ Quality of support from the Laboratory--equipment, funding, orientation, safety and health guidelines, etc.

Comments

I was provided with more than adequate funding which allowed me to obtain all equipment and reagents I needed. I did tend to "fall between the cracks" when it came to some of the general aspects of being part of a research group since I did not "fit" into anyone's research section.

ADVISER/MENTOR SUPPORT

☒ Quality of mentoring from the Laboratory NRC Adviser (USMA Mentor, if applicable)

Comments

Although LTC Coleman was always busy as the Division Director, he would make the time to meet with me or at least check in through email. It was more difficult in the last 6 months to have guidance due to his TDY.

LPR SUPPORT

☒ Quality of administrative support from the Laboratory (e.g., NIST) NRC Program Representative (LPR)

Comments

Dr. Rothman has always been available for questions and approvals when they have been needed.

NRC SUPPORT

☒ Quality of administrative support (applications, inquiries, post-review, award-related, travel, etc.) from the NRC

Comments

The administrative support from the NRC has been great. It would be helpful to have alternate contact information for individuals when they are away for an extended period of time.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

THE NATIONAL ACADEMIES
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National Research Council

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Research Associateship Programs

FINAL REPORT

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
TAKHAMPUNYA	**RATREE**	**-**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. **Twin Towers** Street **1110 Fidler Ln, Apt.923** City, State Zip **Silver Spring, MD 20910**	**Home Phone: 301-256-5944** **Alt. Phone: -** **E-mail: ttakham@yahoo.com**
3) *Today's Date* **November 20, 2007**	*Dates of Tenure* from **December 4, 2006** to **December 3, 2007**

4) *Agency*	*Laboratory or Center*	*Division / Directorate / Department*
AMRMC	**WRAIR**	**Viral Diseases**

5) *Name of Laboratory NRC Adviser* (and USMA Mentor, if applicable)

Maj. Dr. Chun Lin Zhang

6) *TITLE OF RESEARCH PROPOSAL*

IDENTIFY THE GENETIC VARIATION OF PREDOMINANT VERSUS NON-PREDOMINANT GENOTYPE OF DENGUE VIRUS THAT CORRELATE WITH INTERFERON (IFN)-RESPONSE ANTAGONISING/CELL-BINDING INHIBITION IN HUMAN DENDRITIC CELLS

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) The binding capability of Dengue virus (DEN) serotype 1-4 to the DCSIGN receptor on Raji cells between 8 Dengue fever (DF) strains and 10 dengue hemorrhagic fever (DHF) strains has no significant different.

2) The Dengue virus predominant strains trend to bind to DCSIGN receptor on Raji cells better than non-predominant strains.

3) Within DEN-1 the binding and internalization abilities of DHF strain (ThD1-0323/91) and DF strain (ThD1-0488/94) to human Dendritic cells (3 donors) has no significant different when compare the amount of virus bound to receptors on human DCs.

4) Studying the replication rates of 18 isolates of DEN in human DCs cells, we found that DHF strains replicate more efficient than DF strains when compare the production of virus titer from human DCs (3-5 donors) at 48 hr post-infection.

5)

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

N/A

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

As the replication of Dengue virus type 1-4 isolated from DHF patients replicate efficiently in human DCs cells more than viruses isolated from DF patients. One possible mechanism is that DHF viruses are capable of resistance to the immune response which DCs cells produce to counteract the viral pathogens. At present, the ability of DHF strains resistance to the innate immune response using Interferon type 1 (IFN-I) treatment is testing in human hepatoma cell line (Huh-7 and Huh-7b), where Huh-7b has a defective IFN signaling pathway. Then the activated IFN-I signaling factor (Jak-Tyk2, Stat1) will be monitored in DHF- and DF-infected cells using Immunoblot assay. The binding affinity of predominant and non-predominant viruses will be compared to see whether predominant strain binds more strong to receptor than non-predominant strain.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

N/A

b) Books, book chapters, other publications

N/A

c) Manuscripts in preparation, manuscripts submitted

The manuscript is in preparation.

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*
Provide titles, inventors, and dates of applications.

N/A

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*
Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

N/A

Domestic

N/A

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

N/A

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

N/A

14) *POST-TENURE POSITION / JOB TITLE*

Postdoctoral research at Georgetown University

15) *NAME AND ADDRESS OF POST-TENURE POSITION / JOB 0RGANIZATION*

Department of Microbiology & Immunology
Georgetown University Medical Center
3900 Reservoir Road
Washington DC 20057

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
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- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☒ Postdoctoral Research
- ☐ Self Employed
- ☐ Other: **specify** _____

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*
On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

8 Development of knowledge, skills, and research productivity
Comments
I have gained more research skills and experiences on Immunology work with Dr. Dupeh Palmer and she is the one who has contributed most of scientific discussions to this project.

LONG TERM VALUE

9 How the NRC Associateship award affected your career to date
Comments
Open my career opportunity to meet and discuss the research problems with other scientists and cooperate with other laboratories.

LAB SUPPORT

6 Quality of support from the Laboratory--equipment, funding, orientation, safety and health guidelines, etc.
Comments
There is some problem with funding which slow down the research work sometimes. Moreover, the department laboratory considers the clinical research more important than basic research.

ADVISER/MENTOR SUPPORT

7 Quality of mentoring from the Laboratory NRC Adviser (USMA Mentor, if applicable)
Comments
Advisor doesn't have much time for this project, since there are lots of administrative works for her.

LPR SUPPORT

10 Quality of administrative support from the **L**aboratory (e.g., NIST) NRC **P**rogram **R**epresentative (LPR)

Comments

LPR was very efficient of problem solving when there was a problem happened to NRC fellow and laboratory sponsor.

NRC SUPPORT

10 Quality of administrative support (applications, inquiries, post-review, award-related, travel, etc.) from the NRC

Comments

Very quick response with any inquiry, application and traveling processes.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

Mail & Delivery Address
NRC Research Associateship Programs
The National Academies
500 Fifth Street NW, 5th Fl. Rm. 568
Washington, DC 20001

THIS FORM SHOULD BE E-MAILED
directly to your NRC coordinator

http://www7.national-academies.org/rap

Suggestions for, or problems with, forms should be directed to the forms manager, Suzanne White, at swhite@nas.edu

✓ PA Fiscal JAT Asap

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Advisers to the Nation on Science, Engineering, and Medicine
National Research Council

Research Associateship Programs

FINAL REPORT

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*M.I.*
Weeks	**Christine**	**M**

2) *FORWARDING Address* (to which your tax statement will be mailed)	*FORWARDING Phone(s) and E-Mail* (if known)
Res. or Inst. Street **1933 Commonwealth Avenue, Apt 108** City, State Zip **Brighton, MA 02135**	**Home Phone: 617-461-7991** **Alt. Phone:** **E-mail: cweeks@partners.org**

3) *Today's Date*	*Dates of Tenure*
September 7, 2007	from **March 1, 2005** to **September 1, 2007**

4) *Agency*	*Laboratory or Center*	*Division / Directorate / Department*
AMRMC	**WRAIR**	**MCR**

5) *Name of Laboratory NRC Adviser* (and USMA Mentor, if applicable)

Dr. George C. Tsokos

6) *TITLE OF RESEARCH PROPOSAL*

Effect of decay accelerating factor (DAF) treatment and B cell depletion on local and remote ischemia-reperfusion injury in mice

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) **DAF and ischemia-reperfusion injury: DAF treatment after ischemia and prior to reperfusion attenuates remote IR injury in mice in both hindlimb and mesenteric ischemia models**
2) **B cell depletion and ischemia-reperfusion injury: experiments in progress**
3)
4)
5)

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

Much of my time during the past six months was spent preparing my manuscript revision for publication in Clinical Immunology. This entailed more data analysis in answer to reviewer questions. Research in progress includes determination of alternative methods of B cell depletion using commercially available mice with B cell defects, as human B cell receptor transgenic mice obtained from Genentech after much legal discussion died and were not able to breed to carry out originally planned B cell experiments. We are currently working on alternative methods to delineate the population of B cells responsible for initiation of ischemia-reperfusion injury in an attempt to further target therapy to these populations. There is also continued work on decay accelerating factor (DAF) in larger animal models (rats rather than mice) which appears to bear out my published findings that remote IR injury is reduced following DAF treatment after ischemic insult and prior to reperfusion.

9) *PUBLICATIONS AND PAPERS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) **Publications in peer-reviewed journals**

Decay-accelerating factor attenuates remote ischemia-reperfusion-initiated organ damage. Clin Immunol. 2007 Sep;124(3):311-327. Epub 2007 Jul 12.

b) **Books, book chapters, other publications**

c) **Manuscripts in preparation, manuscripts submitted**

10) *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM NRC ASSOCIATESHIP RESEARCH*

Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *POST-TENURE POSITION TITLE*

surgical resident

15) *POST-TENURE ORGANIZATION* **Provide name and address of organization.**

Brigham and Women's Hospital
Department of Surgery
75 Francis Street
Boston, MA 02115

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- ☐ Remain at Host Agency as Permanent Employee
- ☐ Remain at Host Agency as Contract/Temporary Employee
  Abbreviate Host Laboratory/Center _____
- ☐ Research Position at Another US Government Laboratory
- ☐ Administrative Position at US Government Laboratory
- ☐ Research Position at Foreign Government Laboratory
- ☐ Research/Teaching at US College/University
- ☐ Research/Teaching at Foreign College/University
- ☐ Research/Administration in Industry
- ☐ Research/Administration in Non-Profit Organization
- ☐ Postdoctoral Research
- ☐ Self Employed
- ☒ Other: **specify** **resident**

17) *APPRAISAL OF RESEARCH ASSOCIATESHIP PROGRAM*

On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

10 Development of knowledge, skills, and research productivity

Comments

This fellowship was extremely valuable in providng me with the background knowledge and skills to be productive in scientific research. It familiarized me with the critical components of research productivity, so that I can pursue both clinical and research interests when I finish surgical training.

LONG TERM VALUE

10 How the NRC Associateship award affected your career to date

Comments

This fellowship made me aware of and appreciative of the effort, time, and quality research involved in preparation of a scientific paper for submission to an esteemed journal.

LAB SUPPORT

10 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.

Comments

The lab I worked in provided EXCELLENT quality of support--both training and equipment/funding.

ADVISER/MENTOR SUPPORT

10 Quality of mentoring from the Lab NRC Adviser (USMA Mentor, if applicable)

Comments

I cannot say enough about what a fantastic mentor Dr. George Tsokos of WRAIR was to me, or express in words how much I learned from his outstanding research. He provided incredible guidance and support during my tenure as a NRC fellow. Because of him, I am a much better researcher and a much more critical reader of the literature.

LPR SUPPORT

10 Quality administrative support from the Agency/Lab NRC Program Representative (LPR)

Comments

Dr. Rothman was always available when I needed her assistance, and was terrific to work with.

NRC SUPPORT

10 Quality of administrative support from the NRC

Comments

Assistance from the NRC with questions and travel claims was excellent.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

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The National Academies
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Washington, DC 20001

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Suggestions for, or problems with, forms should be directed to the forms manager, Suzanne White, at swhite@nas.edu

ID# 0510610 **Rev.10/2006** **cost-center #**

PA Fiscal Dap

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Research Associateship Programs

FINAL REPORT

Return this form directly to the NRC as an E-mail attachment, or print out and mail or fax.

1) *Associate Last or Family Name*	*First Name*	*MI*
Wilson	**Paul**	**A.**

2) *FORWARDING Address* (for tax statement / final stipend check)	*FORWARDING Phone(s) and E-Mail* (if known)
PO Box 3174 **Hagerstown, MD 21741-3174**	**Home phone: (240) 422-7856** **Alt. phone: (240) 422-7857** **E-mail: paul_a_wilson@mac.com**

3) *Today's Date*	*Dates of Tenure*
April 3, 2007	**from December 1, 2005 to March 30, 2007**

4) *Agency*	*Laboratory or Center*	*Division / Branch / Department*
AMRMC	**TATRC**	

5) *NAME OF RESEARCH ADVISER* **(and USMA Mentor, if applicable)**
Nela Zavaljevski

6) *TITLE OF RESEARCH PROPOSAL*

High Throughput Prediction of Globular and Transmembrane Protein Domains from Sequence

7) *SUMMARY OF RESEARCH DURING TENURE* **Itemize significant findings in concise form, utilizing key concepts/words.**

1) **80% of PPRODO scores 0.7 or higher predict protein structural domain boundaries correctly (within 15 residues).**
2) **A software tool for easily creating custom parallel software pipelines was developed.**
3) **The software tool provides good speed up for up to the maximum number of tested processors - 256.**
4) **479 E. Choli. K12 protein-protein interactions are found in both Prolinks and DIP interaction networks.**
5) **Prolinks database not useful for developing an interaction network for E Coli K12**

(USMA Davies Fellow: please add summary of teaching, including classes taught.)

8) *RESEARCH IN PROGRESS* **Describe in no more than 100 words.**

The protein structural domain boundary prediction program PPRODO was tested using a set of 10,040 proteins assembled from 4,868 single structural domain proteins and 5,172 multi domain proteins. From this it was determined that 80% of PPRODO scores above 0.70 were within 15 residues of the actual structural domain boundary as defined by the NCBI?s Molecular Modeling Database. To accomplish this work a software tool was developed to easily create custom parallel software pipelines. My research efforts were shifted to systems biology and testing the validity of Prolinks derived protein interaction networks.

9) *i*

Provide complete citations: author(s), title, full name of journal, volume number, page number(s), and year of publication.

a) Publications in peer-reviewed journals

b) **Books, book chapters, other publications**

c) **Manuscripts in preparation, manuscripts submitted**

10 *PATENT OR COPYRIGHT APPLICATIONS RESULTING FROM THE NRC ASSOCIATESHIP RESEARCH PROGRAM*

Provide titles, inventors, and dates of applications.

11) *PRESENTATIONS AT SCIENTIFIC MEETINGS OR CONFERENCES*

Provide complete references: author(s), title, abstract/proceeding citation, meeting name and location.

International

Domestic

12) *SEMINARS OR LECTURES DELIVERED AT UNIVERSITIES AND/OR INSTITUTES* **Include dates, names and locations of seminars.**

13) *PROFESSIONAL AWARDS RECEIVED DURING TENURE*

14) *POST-TENURE POSITION TITLE*

Post Doc

15) *POST-TENURE ORGANIZATION* **Provide name and city of organization.**

Johns Hopkins University
Baltimore

16) *POST-TENURE POSITION STATUS / CATEGORY* **Please indicate only one.**

- [ ] Remain at Host Agency as Permanent Employee
- [ ] Remain at Host Agency as Contract/Temporary Employee

Abbreviate Host Laboratory/Center_____

- [ ] Research Position at Another US Government Laboratory
- [ ] Administrative Position at US Government Laboratory
- [ ] Research Position at Foreign Government Laboratory
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- [ ] Research/Teaching at Foreign College/University
- [ ] Research/Administration in Industry
- [ ] Research/Admin in Non-Profit Organization
- [x] Postdoctoral Research
- [ ] Self Employed
- [ ] Other: specify _____

17) *APPRAISAL OF NRC RESEARCH ASSOCIATESHIP PROGRAM*

On a scale of 1 – 10 (poor - excellent), please rate the following:

SHORT TERM VALUE

1 Development of knowledge, skills, and research productivity

Comments

Post doctoral position was similar to a temporary position in industry, where a company tries you out. This was not an environment for learning or developing skills. If one arrives with the skills being sought, then they will be moved into a permanent position.

LONG TERM VALUE

7 How the National Academies Associateship award affected your career to date

Comments

Due to being located in Maryland, it was easier to interview for local postdoctoral opportunities.

LAB SUPPORT

1 Quality of support--equipment, funding, orientation, safety and health guidelines, etc.

Comments

I did not receive an orientation at BHSAI, Fort Detrick. I had to figure everything out on my own. I did receive a Dell Laptop with MS Office installed. However, zero software required by my research was installed and the official stance is we are not allowed to install any software.

ADVISER / MENTOR SUPPORT

2 Quality of mentoring from the Lab NRC Adviser (USMA Mentor, if applicable)

Comments

She can be nice, but seems overwhelmed by her work load. She enables sexism in the workplace. Her expertise is in nuclear physics and my postdoc was in bioinformatics and parallel computing. She made an effort to let me know that everything was indeed my fault.

LPR SUPPORT

1 Quality administrative support from the LPR

Comments

The LPR was belittling. The LPR offered zero support. I do not trust the LPR. Due to the actions of the LPR, the BHSAI has an extremely high turnover rate. The LPR switched me from my funded project in protein structural domain prediction to a system biology project.

NRC SUPPORT

8 Quality of administrative support from the NRC

Comments

I felt on my own, until near the end of my associateship. Then it became apparent that a lot of support is available if I were to have seeked it.

18) *PLEASE PROVIDE ANY SUGGESTIONS FOR PROGRAM IMPROVEMENT.*

Do not spend tax dollars on the BHSAI/BIC. Provide a level of proof that when there are problems, postdocs can confide in the NRC. Fund only opportunities at larger institutes, so post docs can interact, receive career advice... Being stuck, on your own, in an unsupportive environment is bad.